

## CLAIMS

What is claimed is:

1. A serial bus expansion circuit, comprising:
- 5 a bus distribution circuit selectively coupling a serial bus to one of a number of serial bus outputs;
- a distribution controller having a control output coupled to a control input of the bus distribution circuit; and
- a number of power-up pull resistors coupling each of the serial bus
- 10 outputs to a power-up pull source.
2. The serial bus expansion circuit of claim 1, wherein a resistance of each of the power-up pull resistors is greater than a resistance of at least one
- 15 external pull resistor coupled to the serial bus, thereby allowing an external pull source to override the power-up pull source.
3. The serial bus expansion circuit of claim 1, wherein the bus
- 20 distribution circuit is a multiplexer.
4. The serial bus expansion circuit of claim 1, wherein the power-up pull sources includes a state circuit that sequentially places the switch in a first state
- 25 coupling the source voltage to the power-up pull resistors and in a second state coupling the common voltage to the power-up pull resistors in response to a system power-up condition.
5. The serial bus expansion circuit of claim 1, wherein the power-up pull
- 30 source is a switch.

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6. The serial bus expansion circuit of claim 5, wherein the switch alternatively couples each of the power-up pull resistors to a source voltage and a common voltage.

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7. The serial bus expansion circuit of claim 1, further comprising:  
a serial bus input in the distribution controller configured for coupling to the serial bus; and

state circuitry in the distribution controller, the state circuitry  
10 generating a control signal that is applied to the control input of the bus distribution circuit in response to a selection message received via the serial bus, the selection message being addressed to the distribution controller.

15 8. The serial bus expansion circuit of claim 7, wherein the state circuitry generates the control signal in response to a selection payload in the selection message.

20 9. The serial bus expansion circuit of claim 7, wherein the state circuitry applies the control signal to the control input of the bus distribution circuit upon an occurrence of an acknowledge bit in the selection message.

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10. A system for serial bus expansion, comprising:  
means for selecting one of a number of devices to be coupled to a  
serial bus, wherein each of the devices is capable of communicating on the serial  
bus;  
5 means for selectively coupling the serial bus to one of the number of  
devices; and  
means for sequentially pulling a voltage potential of each of a number  
of serial bus inputs of the respective devices to a predefined source voltage  
potential and then to a predefined common voltage potential upon an occurrence of  
10 a system power-up condition.

11. The serial bus expansion circuit of claim 10, wherein the means for  
sequentially pulling the voltage potential of each of the number of serial bus inputs  
15 of the respective devices to the predefined source voltage potential and then to the  
predefined common voltage potential upon the occurrence of the system power-up  
condition further comprises a number of power-up pull resistors coupling each of  
the serial bus inputs to a power-up pull source.

12. The serial bus expansion circuit of claim 11, wherein the power-up  
pull source is a switch that toggles between a predefined voltage source and a  
predefined common voltage source.

13. The serial bus expansion circuit of claim 10, wherein the means for  
selecting one of the number of devices to be coupled to the serial bus further  
comprises means for generating a control signal based upon a selection message  
received via the serial bus and for applying the control signal to the means for  
25 selectively coupling the serial bus to one of the number of devices to direct a  
coupling of the one of the devices to the serial bus.

14. The system of claim 13, wherein the means for applying the control signal to the means for selectively coupling the serial bus to one of the number of devices further comprises means for applying the control signal to the means for selectively coupling the serial bus to one of the number of devices during an occurrence of an acknowledge bit in the selection message.

15. A serial bus expansion method, comprising:  
providing a bus distribution circuit to selectively couple a serial bus to one of a number of serial bus outputs;  
determining a select one of the serial bus outputs to which the serial bus is to be coupled;  
controlling the bus distribution circuit to couple the serial bus to the select one of the serial bus outputs; and  
providing a number of power-up pull resistors that couple each of the serial bus outputs to a power-up pull source.

16. The serial bus expansion method of claim 15, wherein the step of providing a number of power-up pull resistors that couple each of the serial bus outputs to a power-up pull source further comprises the step of providing for a resistance of each of the power-up pull resistors that is greater than a resistance of at least one external pull resistor coupled to the serial bus, thereby allowing an external pull source to override the power-up pull source

17. The serial bus expansion method of claim 15, further comprising alternatively coupling each of the power-up pull resistors to a source voltage and a common voltage.

18. The serial bus expansion method of claim 17, wherein the step of alternatively coupling each of the power-up pull resistors to the source voltage and the common voltage further comprises:

- coupling each of the power-up pull resistors to the source voltage in response to a system power-up condition; and
- subsequently coupling each of the power-up pull resistors to the common voltage.

19. The serial bus expansion method of claim 15, wherein the step of controlling the bus distribution circuit to couple the serial bus to the select one of the serial bus outputs further comprises applying a control signal to a control input of the bus distribution circuit concurrently with an occurrence of an acknowledge bit in a selection message transmitted over the serial bus.